Entry approved
TM
12/13/05

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

Claim 1 (original): An electromagnetic radiation diffuser comprising:

a substrate having a first and a second surface, said first surface having a structure with a three dimensional profile of individual grid units;

a reflective coating formed on said first surface, wherein said reflective coating conforms to said structure; and

an absorptive grating formed on said reflective coating, said absorptive grating including spaces;

wherein said absorptive grating absorbs a first portion of the electromagnetic radiation, while a second portion of the electromagnetic radiation passing through said spaces is diffusely reflected by said reflective coating.

Claim 2 (original): The apparatus of claim 1, wherein said individual grid units have randomly selected heights over a predetermined range.

Claim 3 (original): The apparatus of claim 2, wherein said predetermined range is approximately 50 nanometers.

Claim 4 (original): The apparatus of claim 2, wherein said individual grid units each have an area of approximately 100 nanometers by 100 nanometers.

Claim 5 (original): The apparatus of claim 2, wherein said absorptive grating is oriented diagonally across said individual grid units.

Claim 6 (original): The apparatus of claim 5, wherein said absorptive grating is approximately 3.2 microns wide and repeats approximately every 6.4 microns.

Claim 7 (original): An electromagnetic radiation diffuser comprising:

a substrate having a first and a second surface, said first surface having a structure with a three dimensional profile of individual grid units;

a reflective coating formed on said first surface that conforms to said structure and diffusely reflects extreme ultraviolet radiation; and

an absorptive grating formed over said reflective coating wherein said absorptive grating absorbs a first portion of the electromagnetic radiation, while a second portion of the electromagnetic radiation passing through spaces between said absorptive grating is diffusely reflected by said reflective coating.

Claim 8 (currently amended): The ~~diffuser~~ apparatus of ~~claim 7~~ claim 7, wherein said individual grid units have randomly selected heights over a predetermined range.

Claim 9 (original): The apparatus of claim 8, wherein said predetermined range is approximately 50 nanometers.

Claim 10 (original): The apparatus of claim 8, wherein said individual grid units are approximately 100 nanometers by 100 nanometers.

Claim 11 (original): The apparatus of claim 7, wherein said absorptive grating is oriented diagonally across said individual grid units.

Claim 12 (original): The apparatus of claim 7, wherein said absorptive grating is approximately 3.2 microns wide and repeats approximately every 6.4 microns.

Claim 13 (original): A method for making an electromagnetic radiation diffuser on a substrate, comprising:

(a) fabricating in a first surface of the substrate a three dimensional profile of individual grid units;

(b) forming a reflective coating over said three dimensional profile that conforms to said three dimensional profile; and

(c) forming an absorptive grating over said reflective coating.

Claim 14 (original): The method of claim 13, further comprising:

randomly selecting heights for said individual grid units; and

fabricating said individual grid units according to said randomly selected heights.

Claim 15 (original): The method of claim 14, wherein said randomly selecting step randomly selects said heights of said individual grid units such that said heights range from 0 to approximately 50nm.

Claim 16 (original): The method of claim 14, comprising fabricating individual grid units that have an area of approximately 100 nanometers by 100 nanometers.

Claim 17 (original): The method of claim 13, further comprising orienting said absorptive grating diagonally across said individual grid units.

Claim 18 (currently amended): The method of claim 13, wherein said forming an absorptive grating step forms an absorptive grating portion approximately 3.2 microns wide over said reflective coating and ~~repeating an~~ repeats said absorptive grating portion approximately every 6.4 microns.

Claim 19 (original): A lithography system comprising:

an electromagnetic radiation source;

an electromagnetic radiation diffuser positioned at a first optical plane, said diffuser having a substrate with a three dimensional profile of individual grid units that are covered by a reflective coating that conforms to said substrate, wherein said reflective coating is further covered by an absorptive grating for absorbing a first portion of said electromagnetic radiation, while a second portion of said electromagnetic radiation passing through spaces between said absorptive grating is diffusely reflected by said reflective coating; and

an electromagnetic radiation sensor positioned at a second optical plane;

wherein electromagnetic radiation incident on said diffuser is diffusely reflected and received at said sensor.

Claim 20 (original): The lithography system of claim 19, wherein said electromagnetic radiation source is an extreme ultraviolet radiation source.

Claim 21 (original): The lithography system of claim 19, wherein said first optical plane is a reticle plane.

Claim 22 (original): The lithography system of claim 19, wherein said second optical plane is a wafer plane.

Claim 23 (currently amended): The lithography system of claim 19, wherein said individual grid units have randomly selected heights over a predetermined range.

Claim 24 (currently amended): The lithography system of claim 23, wherein said predetermined range is approximately 50 nanometers.

Claim 25 (currently amended): The lithography system of claim 23, wherein said individual grid units have an area of approximately 100 nanometers by 100 nanometers.

Claim 26 (currently amended): The ~~apparatus~~ lithography system of claim 19, wherein said absorptive grating is oriented diagonally along said individual grid units.

Claim 27 (currently amended): The ~~apparatus~~ lithography system of ~~claim 19~~ claim 19, wherein said absorptive grating is approximately 3.2 microns wide and repeats approximately every 6.4 microns.